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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/287,579	04/06/99	LI	L 105-067USA00

MMC1/1117

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EXAMINER	
QI,Z	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 11/17/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/287,579	LI et al
Examiner	**Group Art Unit**
MIKE QI	2871

☒ Responsive to communication(s) filed on *the election of July 24, 2000.*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-31* is/are pending in the applicat

Of the above, claim(s) *5, 6, and 21-31* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-4 and 7-20* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7, 9, 10, 11, 15, 16, 17 and 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7, 9, 15, 16 and 18 are indefinite as there is no way to determine how low is the low, and what a cost is required to met the low cost or inexpensive limitation for the PSCT polymer material, for the conductive layer and for the liquid crystal material.

Claim 10 is indefinite as what is the relative lower voltages in the prior art can not be determined (every time a new reference is found, the claimed protective scope would be changed, e.g. the 6 volts or 3 volts, etc.), and how low is the relative lower voltage required to met the relative lower voltage limitation to switch the PSCT-based electro-optical glazing structure.

Claim 11 is indefinite as no way to determine how the mechanical strength to be improved and "compared to what"?

Claim 17 is unclear what applicant means by defect free. Does it mean that there are no defects of any microscopic nature? Does it mean that an assembly line runs 100% perfect, with no broken or unusable device?

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 10, 11, 16-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 17 under this 35 U.S.C. 112 first paragraph rejection is contingent upon the language "haze free, defect free and uniform optical characteristics" being interpreted to mean 100% perfect, with no broken or unusable device. It is the examiner's understanding that this is not achievable, and that applicant has disclosed no method of doing this.

Therefore, the claim with this interpretation are not enabled. Further, even if applicant had enabled one method of making a perfect device, applicant had not enabled all possible methods, so the claim would clearly be broader than the enablement.

Claims 10, 11, 16-20 are "single means claims" which does not comply with the enablement requirement of 35 U.S.C. 112, first paragraph. (see MPEP 2181, paragraph "single means claims")

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

6. Claims 1-3, 8 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by US 5,691,795 (Doane et al).

Claims 1-3, Doane et al discloses (col. 6, line 64- col.10, line 60, and in Figs 1-3) the polymer-liquid crystal material (electro-optical glazing structure) is light scattering in a field-OFF condition and optical clear in a field-ON condition. An AC voltage source 17 controls the polymer domains in order to switch the cell between different optical states. For the examination purpose, that is the operation mode can be electrically-activated or switched.

In the field-OFF condition the material is strongly light scattering (total-scattering). When the fields turned on the material is optically clear (total-transmission).

Claim 8 and 18, Doane et al discloses (in Fig.1) the polymer does not have the liquid crystalline phase (see the phase-separated polymer domain 15, i.e. non-mesogenic).

7. Claims 7, 11-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by US 5,570,216 (Lu et al).

Claim 7, Lu et al discloses (col. 2, lines 8-14) a polymer stabilized cholesteric texture

(PSCT) display and making it at a low cost.

For examination purpose, that is the limitation to use low cost PSCT polymer materials understood to be met.

Claim 11, Lu et al discloses (col.2, lines 8-14) a Polymer Stabilized Cholesteric Texture (PSCT) display have excellent mechanical stability. For the examination purpose, that means the improved mechanical strength;

Claims 12, 13 and 15, Lu et al discloses (col.2, lines 42-52) using glass for the substrate 12 that means the low cost glass substrate, and coating an insulating layer on the glass; coating a conductive material as an electrode 20 on the glass, e.g., ITO (Indium Tin oxide).

Such that the mechanical strength, using glass substrate with insulation layer and a low cost conductive layer as electrode as claimed in claims 7, 11-13 and 15 are met by Lu. et al.

8. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by US 5,667,897 (Hashemi et al).

Claim 19, Hashemi et al indicated (col.1, lines 49-51) "float-glass processing is the conventional way of producing sheet glass, used for automotive and architectural uses, throughout the world".

Please note, the PSCT limitation is only in the preamble, and therefore it is only given weight as intended use. As this system may be used to make PSCT device, so that this limitation is met.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,691,795 (Doane et al) as applied to claim 2 above.

Doane et al also discloses (col. 4, lines 1-18) the wavelength of the light that is reflected by the material is given by the relation $\lambda=np$ (n is the average reflective index, p is the pitch length), and the wavelength can be above infra-red and below ultra-violet, i.e. a broad band electromagnetic spectrum of operation including the UV light, infra-red or visible light.

It is the examiner's understanding that it was well known to tailor the band to the required application, and therefore it would have been obvious, in the device of Doane et al to employ a wide band including near-IR, visible and near-UV in order to tailor the operation to the band required for any given application.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,097,130 (Cole, Jr) in view of US 4,890,902 (Doane et al 902).

Claim 9, Cole, Jr discloses (col.1, lines 32-52) utilizes dichroic dye to make a multi-colored display, and Doane et al 902 also discloses (col.1, lines 33-36 and col. 4, lines 16-24) such liquid crystal employed in various windows and contains dichroic dye, so that uses dichroic

dye in a PSCT material was well known for enabling color display at time and would have been obvious.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,691,795 (Doane et al).

Claim 10, Doane et al discloses (col. 5, lines 9- 47) a polymer stabilized liquid crystal display based on liquid crystal Polymer Stabilized Cholesteric Texture (PSCT) used into an electro-optical glazing structure can be switched by the field-OFF or the filed-ON condition, and the magnitude of the field necessary to drive the material among various states will vary depending upon the nature and amount of the particular liquid crystal and polymer used, and that can be easily determined by one of ordinary skill in the art.

In case, applicant argues 6 volts does not meet the claim limitation, but it was well known to have a voltage as low as possible. Therefore, this limitation would have been obvious.

The relatively lower voltage does not indicate how low is low. Doane et al also discloses a low electric field, e.g. 6 volts that also can be a relatively lower voltage, as we don't know what prior art device we are comparing to.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,691,795 (Doane et al)

Claim 17, Doane et al discloses (col. 1, lines 18-25) the PSCT display can exhibit a haze-free light transmission at all viewing angles in either a field-On or field-OFF mode. It was a well known goal of the field to make devices as defect free as possible, and with the broader

interpretation of the language as not truly being met, this would have been obvious as it was a goal of the field.

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,579,422 (Simoni et al).

Claim 20, Simoni et al discloses (col.3, lines 45-48) in order to obtain a good orientation of the cholesteric mixture 1, the glass plates 2, 2' were repeatedly immersed in a 1 % solution of a polymer surfactant of the silane family (for example MAP-E of CHISSO CORP.). So that to achieve a good orientation is understood to mean the same thing as a uniform optical properties.

Therefore, adding a surfactant in order to achieve uniform optical properties as claimed in claim 20 would have been obvious.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,~~196,974~~ 579422 (Simoni et al).

Claim 14, using special additive to eliminate the liquid crystal flow streaks like the surfactant in claim 20 to achieve a good planar orientation of the cholesteric mixture, so as to eliminate the liquid crystal streaks. Such that Simoni et al discloses (col.3, lines 45-48) adding a surfactant to the material, the molecules having a uniform orientation would be the motivation for the special additive.

Therefore, using a special additive to achieve the effective result involves only a routing skill in the art, and it would have been obvious.

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,691,795 (Doane et al).

Claim 16, Doane et al discloses (col.1, lines 18-48) a electrically switchable liquid crystal films intended for use in various electro-optical devices, e.g. for windows, projection display, etc. It was well known to make windows large for aesthetic appeal.

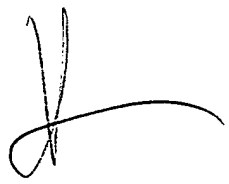
So that to attain a greater surface areas for windows or projection display only involves a routing skill in the art, and it would have been obvious.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703)308-6213 .

Mike Qi
November 13, 2000



KENNETH PARKER
PRIMARY EXAMINER